28 March, 2001

MODIS sensor Working Group (MsWG) Summary

Attendance**:** Bill Barnes, Bob Evans, Bruce Guenther, Eric Vermote, Gary Toller, Jim Butler, Roger Drake, Stuart Biggar, Vince Salomonson, Wayne Esaias, Zhengming Wan, Vincent Chiang, Gwyn Fireman

Follow up discussion on RSB degradation

Renormalization of SD and SDSM Sun View data to SDSM detector 7 is essentially the same as when normalized to detector 9.

Concerns:

- Why is there an outlier at day 170?
- Spectralon shows different relative spectral degradation in different laboratory samples
- There appear to be systematic residuals to the exponential fit.
- Linear fit is not constrained to a specified start time.
- Solar diffuser BRF was measured for Sun-illuminated angles, not for SDSM observation angles.
- How does Spectralon's differential spectral degradation affect the BRF?
- Is there seasonal variation of BRF due to varying illumination angles?
- How do we know sensor sees same degradation as we see with SDSM due to differences in observing geometry?
- What are results of SDSM screen vignetting study? Has incomplete understanding of vignetting affected the degradation results?
- Does scan mirror degradation imply a change with time for RVS?
- Fits should use samples binned by time to offset uneven temporal sampling.

Actions on MCST:

- 0103–17: Explore temperature effects on SD/SDSM Sun View measurements.
- 0103–18: Consider using fits weighted by uncertainty estimates.
- 0103–19: Consider using best fit for retrospective processing, and exponential extrapolation only for forward processing.
- 0103–20: Re-examine the problem to make sure we understand all effects.
- 0103–21: Clarify uncertainty estimates; includes observed SNR and uncertainty of all system components?
- 0103–22: Consider fits in respect to accumulated SD exposure time instead of to time on orbit.

Around the Table

Vermote: No progress to report on polarization work.

Miami: Trying to get SST thermal and mid-IR algorithms working. Regressions of MODIS data wrt ground-based observations indicate that the spectral response of Bands 20, 22, 23, 31 and 32 may not be as expected. Regressions were done in 10-15 degree scan angle increments.

Miami asked if the RSR is working for those bands; Guenther replied that there is little difference between detectors. For Terra-MODIS, RSR was measured in vacuum for Bands 21, 22, and 23 and in ambient conditions for Bands 31 and 32. SBRS reported that RVS was measured in vacuum only for FM-1. We have no method to test for any apparent differences in RSR on LWIR FPA bands between laboratory and vacuum measurements.

Wan: Studying February 27 Lake Tahoe data; though expected to be a clear scene some cirrus is apparent. Walker Lake, Nevada will be measured on April 16.

Drake: Looking at Band 26 striping in T/V data. The SIS level closest to SD screen up radiance and the SV average were used to perform a 2-point calibration fit for every channel, then effective SIS radiance was computed for other levels using this calibration factor. Channel 2 is high; striping seen in T/V is similar to that seen on-orbit. Band 26 calibration is at 60 radiance units; saturation is at 90, and about 70% of T/V data are saturated.
Action on SBRS 0103–23: Try to determine a non-linear a2 calibration term for Band 26.

compiled by G. Fireman 30 March, 2001